(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 22 March 2001 (22.03.2001)

PCT

(10) International Publication Number WO 01/19254 A3

- (51) International Patent Classification7: A61B 17/064
- (21) International Application Number: PCT/US00/24544
- (22) International Filing Date:

7 September 2000 (07.09.2000)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

09/397,832

17 September 1999 (17.09.1999) US

- (71) Applicant: GENZYME CORPORATION [US/US]; 15 Pleasant Street Connector, P.O. Box 9322, Framingham, MA 01701-9322 (US).
- (72) Inventors: CUMMINGS, Joel, W.; 97 Sequoia Drive, Tyngsboro, MA 01879 (US). DEANGELIS, Roland; 538 Brook Road, Milton, MA 02186 (US). CLARK, Brian; 95 Sacramento Street, Somerville, MA 02143 (US). SCHIFF, David; 213 Valentine Street, Highland Park, NJ 08904 (US). MULHAUSER, Paul; 69 Fifth Avenue, New York, NY 10003 (US). GALA, Jesse; 180 Summit Avenue, Summit, NJ 07901 (US).

- (74) Agent: ALLISON, Richard, D.; Genzyme Corporation, 15 Pleasant Street Connector, P.O. Box 9322, Framingham, MA 01701-9322 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

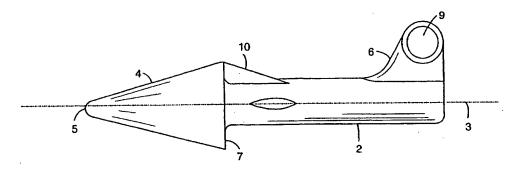
Published:

with international search report

(88) Date of publication of the international search report: 25 October 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SURGICAL FASTENER AND DEVICE AND METHOD FOR APPLYING IT



(57) Abstract: The present invention relates to new surgical fasteners and methods of using the surgical fasteners. The surgical fasteners of the invention are in the form of tacks and comprise generally an elongate rod, a sharp conical head, a tail, and a transverse locking member extending from the tail above the plane of the rod. The fasteners are inserted into a bodily cavity for tissue and membrane fixation and approximation by the use of tack applicators. The tack applicators of the invention generally comprise an elongate handle, a loading tip and a carrier assembly that is removably inserted into the loading tip. The tacks are inserted and locked into the carrier assembly from which they may be disengaged.



O 01/19254 A3

INTERNATIONAL SEARCH REPORT

Inte Jonal Application No PCT/US 00/24544

		PCT/US 0	0/24544		
a. classii IPC 7	FICATION OF SUBJECT MATTER A61B17/064				
According to	International Patent Classification (IPC) or to both national class	sification and IPC			
	SEARCHED				
IPC 7	cumentation searched (classification system followed by classif A61B	ication symbols)			
	<u> </u>				
Documentat	ion searched other than minimum documentation to the extent to	hat such documents are included in the fields	searched		
					
EPO-In	ala_base consulled during the international search (name of dal ternal	a base and, where practical, search terms use	a)		
_, 0 _,,					
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the	e relevant passages	Relevant to claim No.		
4	US 5 941 439 A (KAMMERER ET AL	.)	1,9,12,		
	24 August 1999 (1999-08-24)		13,24,		
	column 5, line 4 - line 50		30,36,37		
	column 7, line 14 - line 22 figures 1,27-29,41,42				
					
A	US 5 843 084 A (HART ET AL.) 1 December 1998 (1998-12-01)		1,2,9, 24,30,36		
	column 13, line 43 - line 50;	claim 1;	24,30,30		
-	figures 1,18,34				
A	US 5 674 247 A (SOHN)	· · · · · · · · · · · · · · · · · · ·	1,9,24,		
e - 2 cm,	7 October 1997 (1997-10-07) column 3, line 42 - line 62; f	igures: 1,2.	30,36		
	 .	-/			
X Furt	her documents are listed in the continuation of box C.	χ Patent family members are listed	lin annex		
	alegories of cited documents :	<u> </u>	, in district.		
"A" docum	ernational filing date of the application but				
'E' earlier	dered to be of particular relevance document but published on or after the international	invention	cited to understand the principle or theory underlying the invention 'X' document of particular relevance; the claimed invention		
	ent which may throw doubts on priority claim(s) or	cannot be considered novel or cannot involve an inventive step when the di	t be considered to ocument is taken alone		
citatio	is cited to establish the publication date of another n or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or	 "Y" document of particular relevance; the cannot be considered to involve an in document is combined with one or m 	ventive step when the		
other	means ent published prior to the international filing date but	ments, such combination being obvious in the art.	ous to a person skilled		
later t	han the priority date claimed actual completion of the international search	*&* document member of the same patent	· · · · · · · · · · · · · · · · · · ·		
Jaie Oi IIIE	accas compression of the international search	Date of mailing of the international se	агсп героп		
2	1 November 2000	04/12/2000			
Name and	mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2	Authorized officer			
	NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl,	Ducreau, F			
	Fax: (+31-70) 340-3016	buci edu, i	•		

1

INTERNATIONAL SEARCH REPORT

Inte. .ional Application No PCT/US 00/24544

Category *	tion) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.	
Calegory -	ополого ососители, эти полосион, этеге арргориате, от the resevant passages		певчан и сми МО,
А	US 5 246 441 A (ROSS ET AL.) 21 September 1993 (1993-09-21) abstract; figure 1	1,9,24, 30,36	
A	US 4 873 976 A (SCHREIBER) 17 October 1989 (1989-10-17) the whole document		1,9,24, 30,36
• .			
· ·		.	
	e the state was a second of the control of the cont		t de la Maria de la decembra decembra de la decembra decembra de la decembra decembra de la decembra de la decembra de la decembra de la dece
		i?	

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intuisonal Application No PCT/US 00/24544

Patent docume cited in search re		Publication date		Patent family member(s)	Publication date
US 5941439	Α	24-08-1999	AU	7375398 A	08-12-1998
			BR	9804909 A	14-09-1999
			CA	2260134 A	19-11-1998
			CN	1234726 T	10-11-1999
	•		EP	0936885 A	25-08-1999
			WO	9851179 A	19-11-1998
US 5843084	Α	01-12-1998	AU	1055797 A	11-06-1997
			WO	9718762 A	29-05-1997
US 5674247	Α	07-10-1997	IL	111985 A	11-04-1999
			AU	4519796 A	03-07-1996
			CA	2207739 A	20-06-1996
•			EP:		01-10-1997
			JP		04-11-1998
			WO	9618352 A	20-06-1996
 		·	ÜS	5873891 A	23-02-1999
US 5246441	Α	21-09-1993	US	5129906 A	14-07-1992
•			US	5152765 A	06-10-1992
	<u>.</u>		US ,	5203784 A	20-04-1993
US 4873976	Α	17-10-1989	AU	4066785 A	24-09-1985
			EP		19-03-1986
			WO	8503857 A	12-09-1985